Tele Atlas Find more.

WAGIC Presentation
Tele Atlas MultiNet Product Line

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Introduction

MultiNet is the premier global map database that offers end users of navigation and location-based solutions the **freshest** and **most accurate** map content thanks to the contribution of the world's largest **community** of map users.

Product description

A street network vector database

Coverage of more than 70 countries

More than 240 features and 230 attributes

Fresh, accurate and rich in detail

The MultiNet difference

Fresh data	▪ Integration of community input – Millions of map users share and update information – Both active reporting and data collection of GPS measurements
Superior positional accuracy	▪ Collection and validation of information from tens of thousands of global, trusted sources ▪ Amongst others, Mobile Mapping technology enables ADAS compliant accuracy

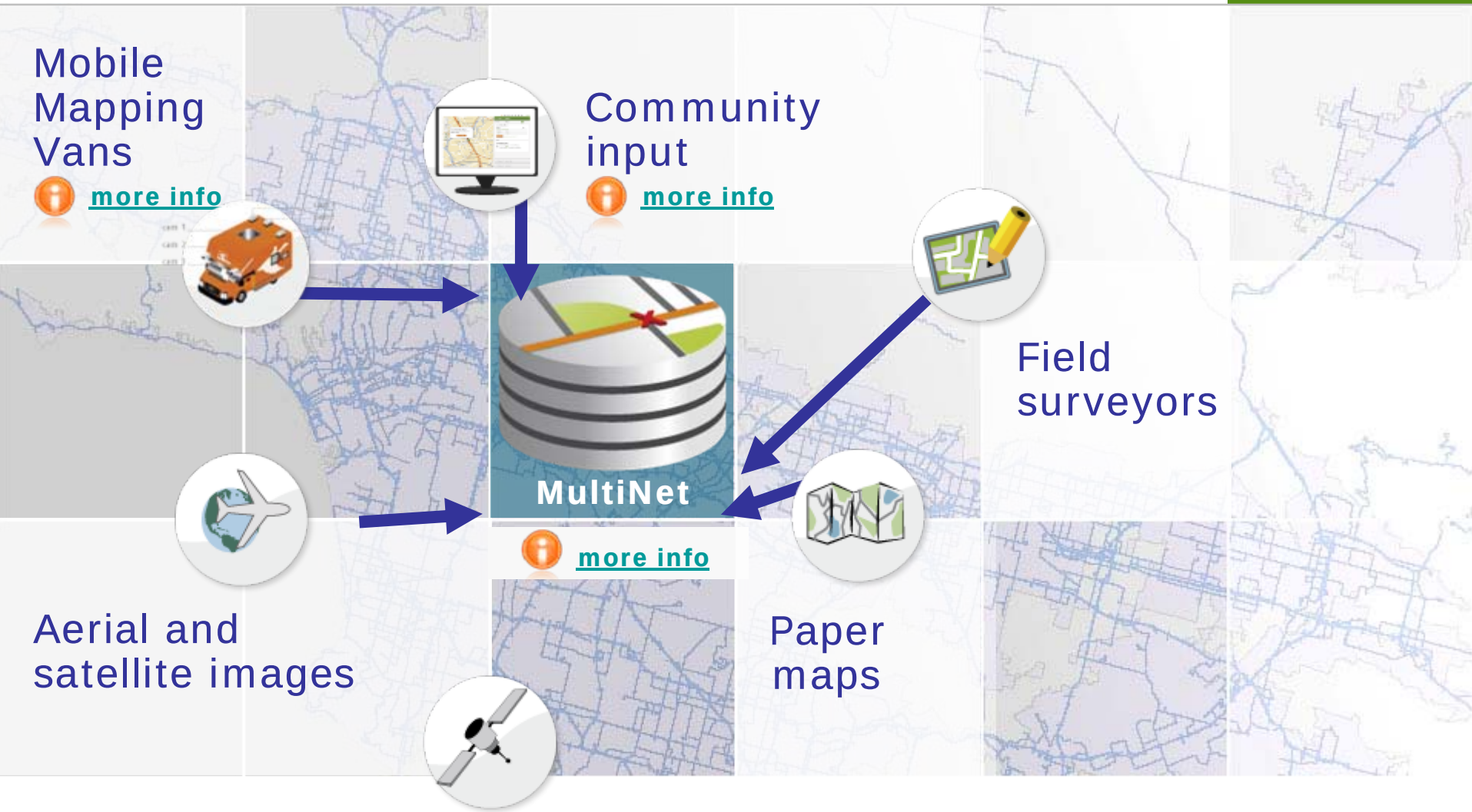
Benefits

Global coverage	▪ 72 countries in 6 continents and still growing ▪ Population of 2.1 billion people ▪ 27 million km/17 million miles
Uniform specification	▪ Designed for multi-regional development ▪ Allows smooth global expansion, quick product launches and short time-to-market
Rich content	▪ Guide, Find & Display attributes to support different functionalities ▪ Enhancement products enable partners to differentiate their solutions

50,000 global sources

Fresh data

Accuracy



Guide – Find – Display

Rich content

Guide

Be guided from A to B

Generate accurate and customizable routes in real time with clear, audible and/or visual instructions

Find

Find what you are looking for

Help users find the people, places and products important in their daily lives

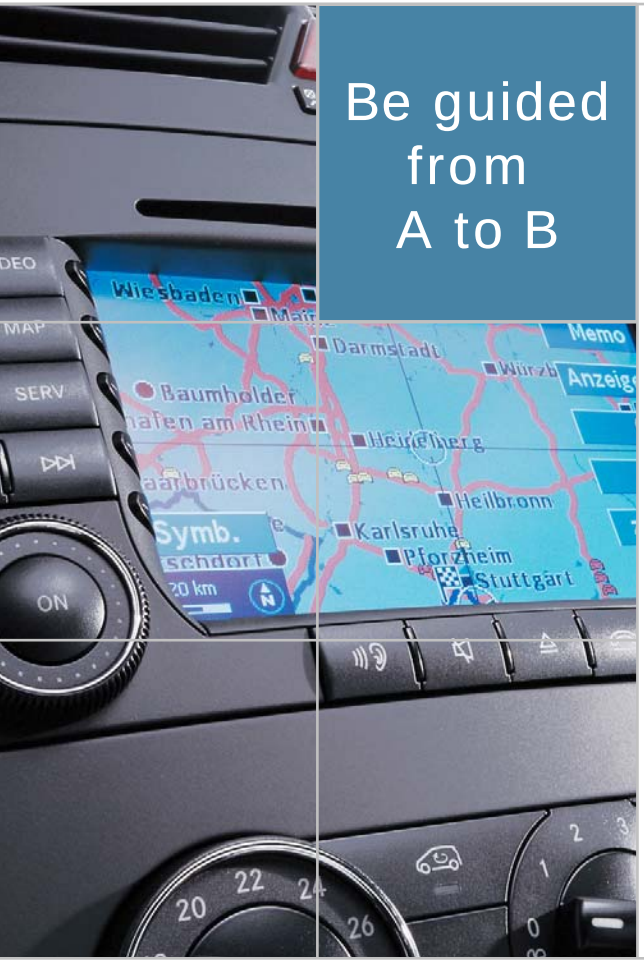
Display

See clearly where you are now and where you are going

Optimally visualize reality

Guide

Rich content



- Road and street network geometry
- Network and form-of-way classification
- Maneuvers and blocked passages
- Structures
- Speed restrictions
- Signpost information
- Lane information
- TMC codes

Features

Find

Rich content

- Street names and addresses
- Postal information and administrative areas
- Locality index
- Core points of interest

Features

Display

Rich content

See clearly where you are now and where you're going

- Network and form-of-way classification
- Land use/land cover and water areas/water center lines
- Structures

Features

Enhancement products

Rich content

Guide

- Speed Profiles
- Voice Maps
- Safety Cameras
- Logistics

Find

- Points of Interest
- Address Points
- Urban Maps
- ContentLink

Display

- 2D and 3D City Maps
- Landmark Icons and 3D Landmarks
- Digital Elevation Model
- Aerial and Satellite Imagery

Markets

Portable Navigation

mio explore more
TOMTOM
DestinAtor Technologies
NDRIVE
WAYFINDER
GARMIN
Nav N Go
PHAROS
NAVMAN
iFodor's
AVMAP A C-MAP GROUP COMPANY
MXGUIDE

Internet Mapping

Google
Microsoft
MAPQUEST
ViaMichelin
Ask.com
YAHOO!
mappy

Wireless and LBS

Google
at&t
3
WAYFINDER
QUALCOMM
Atlas CT
NIM NETWORKS IN MOTION
TeleNav
Sprint
T-Mobile
deCarta
spatial
RIM
vodafone

Automotive Navigation

GM
RENAULT
LEXUS
Ford
Mercedes-Benz
Continental
TOYOTA
iPC INCREMENT P CORP
MASERATI
BMW
Pioneer sound. vision. soul
BLAUPUNKT
OnStar
DENSO
HARMAN/BECKER AUTOMOTIVE SYSTEMS

Enterprise and Government

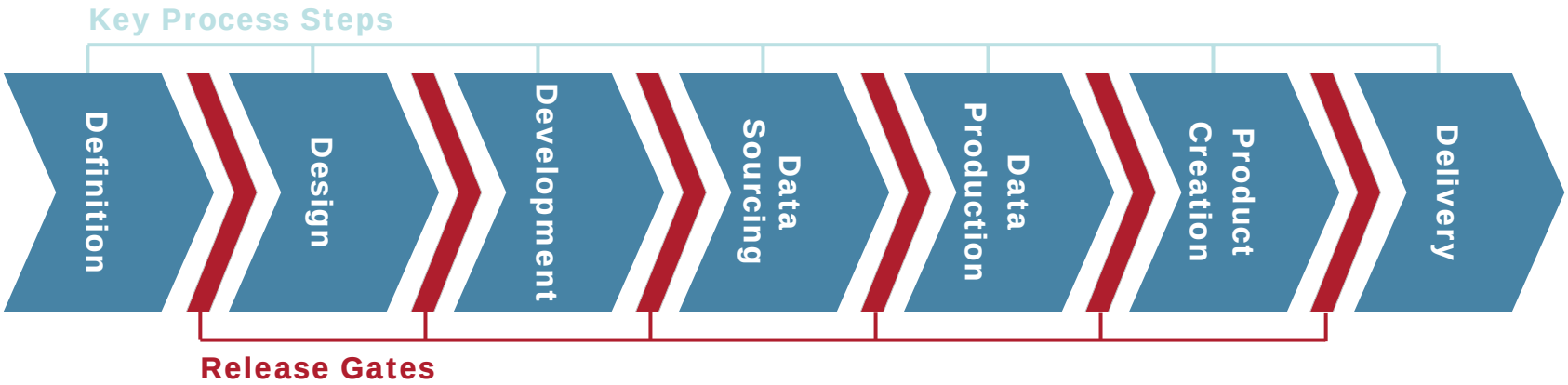
Deutsche Post
verizon
UPS
QUALCOMM
TCS TeleCommunication Systems
FedEx
GHD Safety, Service, & Security
intrado
at&t
OS Ordnance Survey
Cubrans
Pitney Bowes GROUP 1 SOFTWARE
Pitney Bowes MapInfo
ESRI

Formats

- GDF-AS (ASCII-Sequential)
  - CEN-approved standard international exchange format and data model for navigable databases
- GDF-AR
  - ASCII-Relational version of the standard GDF-format
- Shapefile
  - Shapefile format, structured according to a ready-to-use layered data model
- Oracle
  - Oracle Spatial loader files together with complete with SQL scripts and batch software for easy upload and spatial index creation in Oracle 10g and 11g

Global quality processes

Effectiveness of our entire Customer-to Customer Process is confirmed by its certification according to International Automotive Quality Management Standard (ISO/TS 16949)



Our Release Gate process is confirmed by TÜV certification, validating achievement of the Quality Levels agreed with our customers

Conclusion

Our goal is to create the reference for real-time accurate maps and routing intelligence using input from millions of users around the world, a wealth of dynamic content, and traditional data collection methods.

We deliver more of what end users demand, empowering all our customers to build the most useful and innovative solutions possible.

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Appendix Topics

- Community input
- Mobile mapping technology
- Conventional sources
- Roadmap coverage Q4 2010
- Guide, Find and Display features
- Enhancement products

Active community input

- A map user can actively report a change via:
  - Partner communities
  - Tele Atlas Map Insight online reporting tool
- Thousands of reports are submitted every day leading to:
  - Increased accuracy
  - Highest possible relevance of changes
- Quality assurance: rigorous validation process
- Integration in future map releases: benefits all customers

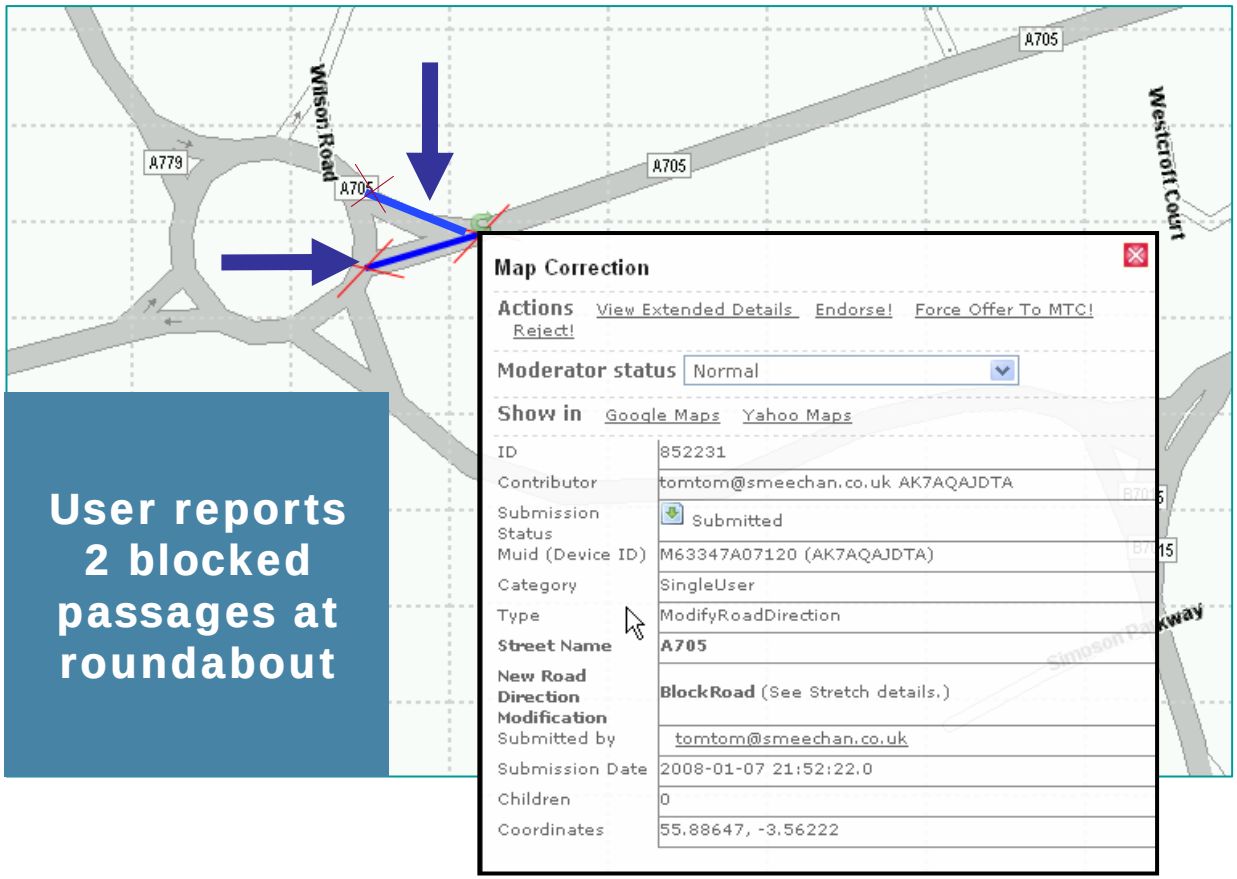
Passive community input

- Anonymous GPS measurements of millions of navigation device users are logged, enabling the best navigation:
  - Adding new geometry
  - Updating existing attributes e.g. direction of traffic flow

Our goal is to provide the most alive, most connected map possible.

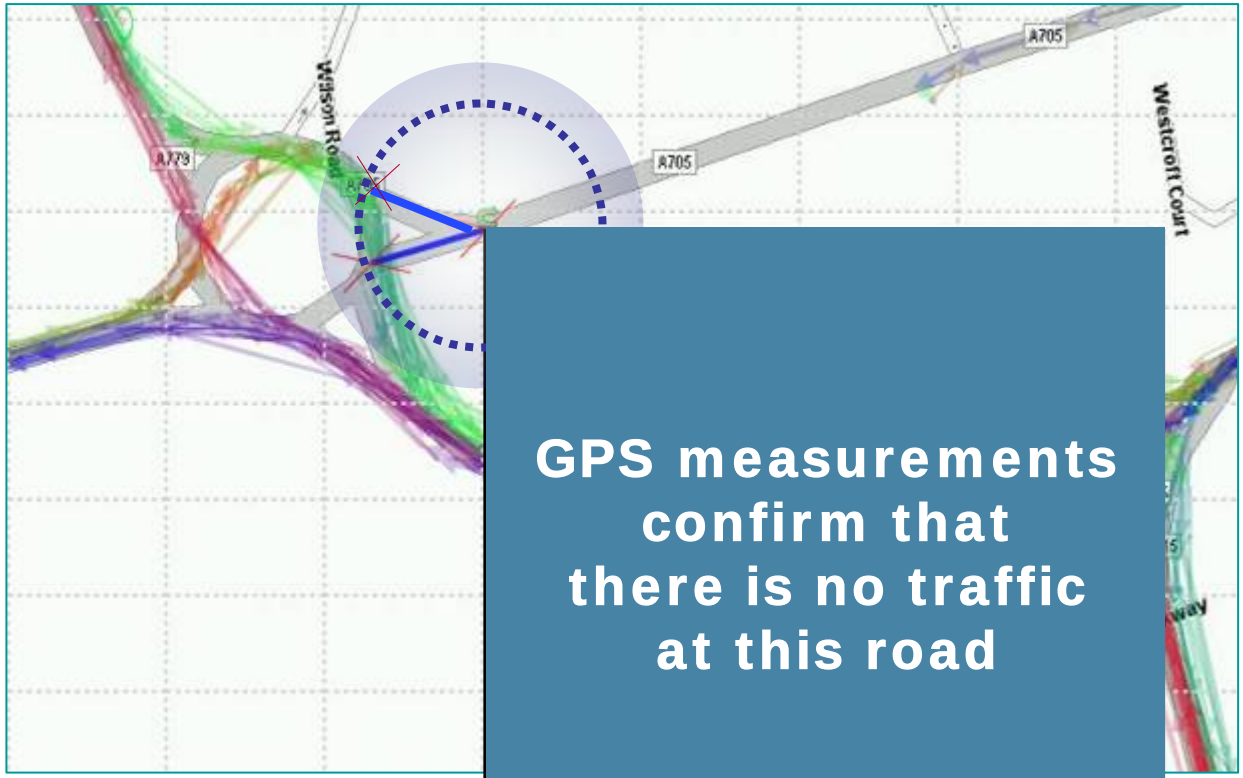
Using input from millions of users around the world, a wealth of dynamic content and traditional data.

Combined use of community input and trusted sources



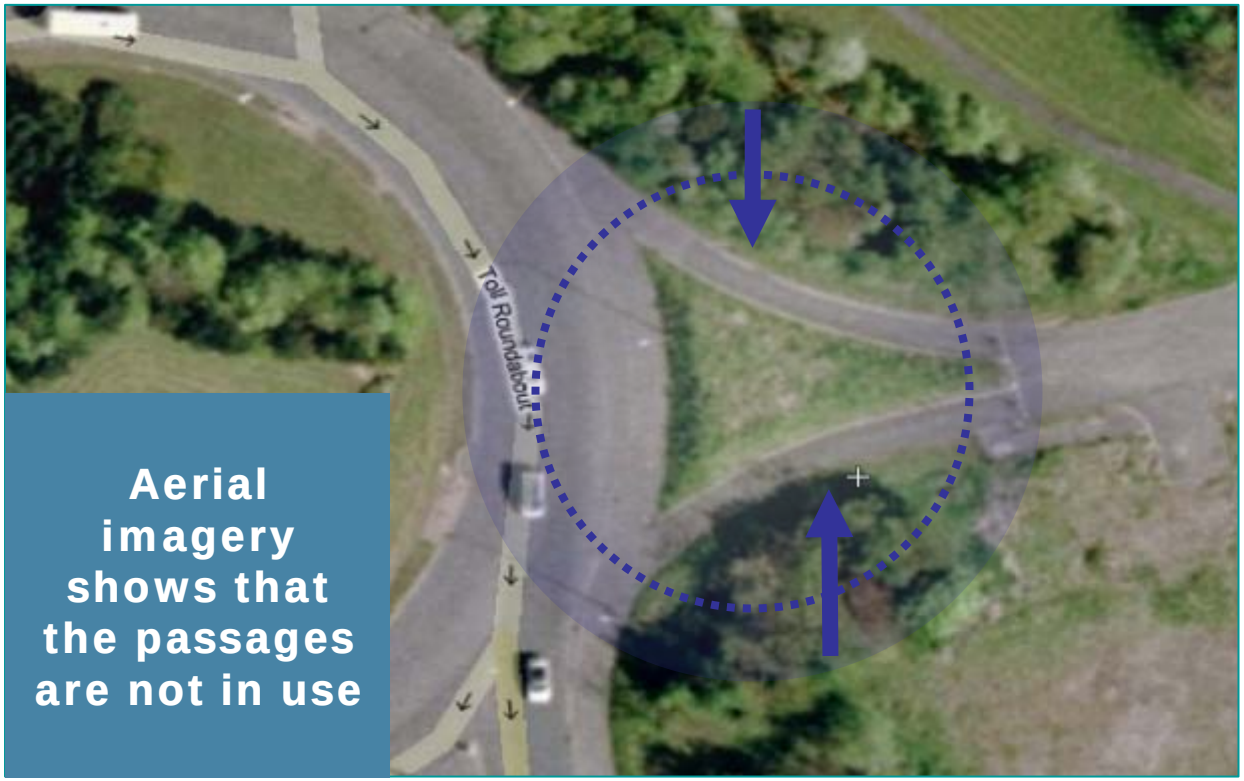
User reports 2 blocked passages at roundabout

Combined use of community input and trusted sources



GPS measurements confirm that there is no traffic at this road

Combined use of community input and trusted sources



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Mobile mapping technology

- Mobile mapping vans (MMV) capture multi-dimensional views of a roadway as they drive the road network
- Each vehicle is equipped with up to six high-resolution digital cameras, including at least one stereoscopic pair to provide 3-dimensional information
- MMVs are one of the technologies Tele Atlas uses to deliver superior map accuracy: positional accuracy of 1-12m, with ADAS compliant accuracy of 1-5m on the highest road classes

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Conventional sources

Paper maps

Cross-check road classification and topographical info

Aerial and satellite images

Provide unrivaled overviews of road networks, land use, etc.

Field surveyors

Drive the road to check, validate and refine all road info

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Road and street network geometry

Major Road Network (MRNW)

Covers freeways, motorways and limited access highways; Connector Roads are a subset of the Major Road Network

Interconnecting Network (ICNW)

Covering all of the above and connecting roads of high and medium importance

Street Network (STNW)

The entire road network, including destination and local roads

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Network and form-of-way classification

- Network classification:
  - Range of road classes from international to local roads
- Form-of-way classification:
  - Range of classes including single/dual carriageway, motorway, roundabout, slip road, etc.

- Allows you to offer users:
  - optimal routing (e.g. routing on the highest possible net class)
  - differentiated display (recognizable way to display international routes down to local roads)

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Maneuvers and blocked passages

- Maneuvers:
  - Indications based on traffic signs about prohibited, restricted or priority routes
- Blocked passages:
  - Indications based on physical obstructions

Allows you to guide users to destination in the most time-efficient, convenient and safe way

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Structures

- Accurate indication of structures such as bridges and tunnels:
  - Dimension
  - Over/underpass levels

- Enables you to:
  - Route users correctly
  - Display bridges and tunnels in a recognizable way

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Speed restrictions

- Speed values for roads

- Lets you:
  - Provide users with speed instructions and warnings in both voice and display
  - calculate estimated travel time

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Signpost information

- Exit, route number and destination information available on limited access highways (motorways)

Enables you to provide users with additional clear voice and display instructions when approaching decision points

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Lane information

- Lane-specific characteristics:
  - Number of lanes per road element
  - Lane divider type
  - Lane type
  - Lane direction

Allows you to let users anticipate through lane-specific guidance instructions and display

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TMC codes

- Integration of all recent and official TMC codes (locations and paths) and reference to core geometry

TRAFFIC MESSAGE CHANNEL

Enables you to offer users alternative routes in case of accidents, road works, etc.

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Street names and addresses

- Official and alternative street names and detailed house number information

Enables you to let users find and arrive at a specific address

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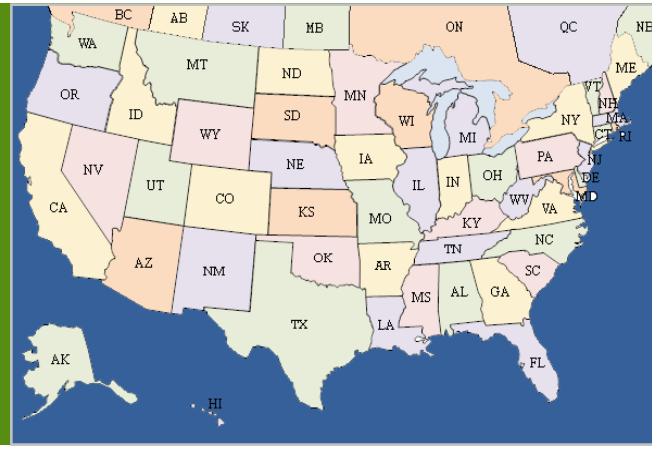
Postal information and administrative areas

- Postal information:
  - Postal codes and postal district boundaries
- Administrative areas:
  - Boundaries and road attribution for administrative divisions of a country

Allows you to let user select a destination in a straightforward and unambiguous way



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Locality index

- Pre-built index of prioritized locality names from administrative, postal, and other locality sources that:
  - Provides a turnkey, out of the box solution
  - Combines a global structure with locally verified country specifics
  - Embeds indexing differences for each country, e.g. neighborhood names, US Postal Service preferred (last line) postal names, all municipality and city names in Europe, etc.

Enables you to let users easily select a destination

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Core points of interest

- Specific point location that someone may find useful or interesting
- Built-in set of core points of interest categories, including airports, railway stations, rest areas, etc.

Enables you to offer users an easy way to search, select and get to a place of interest

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Land use / land cover and water areas / water center lines

- Land use/land cover:
  - Detailed boundaries for a variety of categories (parks, forests, industrial areas, airport grounds, built-up areas, ...)
- Water areas/water center lines:
  - Indication of water element type including oceans, seas and lakes

Allows you to offer users:

- More detailed map display
- Better orientation and guidance

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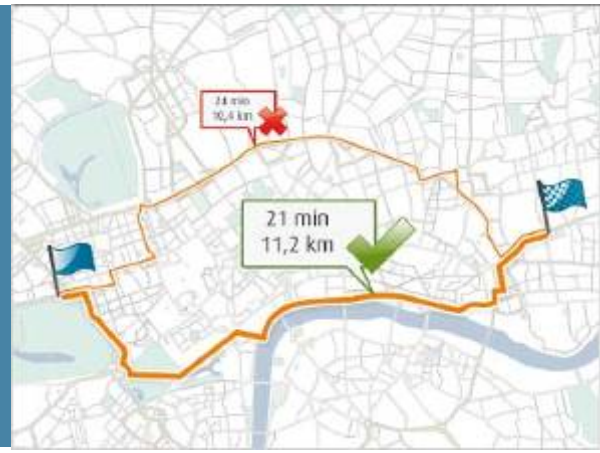
Speed Profiles

- Accurate and detailed historical speed data derived from GPS measurements of millions of devices allowing user to:
  - select the most optimal route
  - calculate ETA more accurately for different times of the day and different days of the week

Enables you to let users:

- Save time
- Save money
- Consume less fuel
- Help preserve the environment



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Logistics

- Combination of:
  - Commercial fleet routing attributes based on real life truck limitations (vehicle dimensions, traffic flow restrictions, truck specific POIs, etc.)
  - Full geocoding functionality
  - Clear map display

Allows you to let users:

- Better estimate arrival times
- Improve tracking and security
- Increase productivity
- Reduce costs

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Premium Points of Interest

- Range of premium POIs:
  - More than 70 categories (petrol stations, hotels, restaurants, cash dispensers, companies, hospitals, etc.)
  - Containing name, address, phone number, etc.
- Offer of more than 20 million POIs in total:
  - EMEA: >5 million | NAM: 12 million | APAC: 3 million

Enables you to help users locate and find a place of personal interest

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Address Points

- Address data from trusted private and governmental sources that:
  - Pinpoint discrete, actual street addresses to physical buildings or property parcels with high accuracy
  - Enable unparalleled geospatial analysis and navigation

Allows you to let users:

- Quickly and precisely locate addresses
- Improve productivity
- Lower costs
- Improve customer targeting or risk estimation

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Urban Maps

- Pedestrian intelligence in city centers with premier out-of-car content to enhance end user convenience, community and infotainment experiences

Enables you to let users:

- Quickly recognize map location for ‘reality check’
- Move around considering freedom and limitations of a pedestrian

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2D and 3D City Maps

- 2 or 3-dimensional outlines of buildings, railway infrastructure, all visible land use and land cover elements and infrastructures called town blocks in city centers
- 2D City Maps available in two levels of resolution
- 3D City Maps available in two model types: block and fully textured (including 3D landmarks)

Allows you to offer users:

- Richer and nicer map display
- Better orientation and guidance
- Faster recognition of map location versus reality

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Landmark Icons and 3D Landmarks

- Landmark icons (2D bitmap) or 3D landmarks (detailed, can be rotated) represent remarkable buildings of which the majority have facades that are visible or represent stand alone statues
- They are clear, visible objects with a high degree of recognition and can be spotted from a long distance

Enables you to offer users:

- Better orientation
- Faster recognition of map location versus reality

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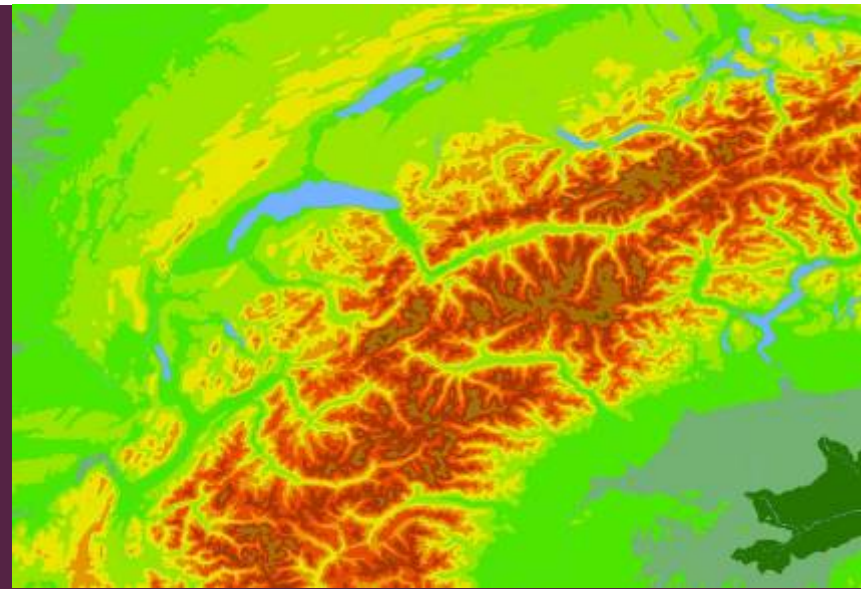
Digital Elevation Model

- Representation of the landscape's altitude

Allows you to offer users:

- A more realistic display of small and medium scale maps
- Better orientation
- Layout comparable to cartographic atlas maps
- Usage in both 2D and 3D visualization of maps



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Aerial and Satellite Imagery

- Worldwide satellite imagery with 100m, 500m, 30m and 15m resolution
- Aerial imagery of over 10 million square miles of the earth covered at 1 meter or better

Enables you to gives users better visual recognition for orientation through:

- Different map display zoom levels
- Combination with 2D representation or 3D visualization of maps

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